REMARKS

Claims 1-12 are pending in the present application. Claim 1-12 have been rejected under 35 U.S.C. § 102(e) over Tsurushima *et al.* (US2001/0047256 A1). Reconsideration of the present application is respectfully requested in light of the below remarks.

Claims 1-12 have been rejected under 35 U.S.C. § 102(e) over Tsurushima. Applicants respectfully traverse this rejection.

As argued in the response to the previous Office Action, Claims 1, 6 and 7 explicitly require that "the bit allocation is performed using a weighting table." Applicants respectfully submit that this feature of the present invention is neither taught nor suggested by Tsurushima.

Tsurushima discloses a CPU-intensive bit allocation method that requires using a psychoacoustic model, analyzing FFT data, calculating masking effects, and the like. (See Tsurushima at paragraphs 135-139). In contrast to Tsurushima's CPU-intensive method, Applicants' method for bit allocation is performed using a weighting table. By virtue of the recited use of a weighting table (sometimes referred to as a 'lookup table'), the efficiency of a system is increased by reducing the number of calculations to be performed by the CPU.

On page 3 of the Office Action, the Examiner rejected the "weighting table" element in claim 2 referring to paragraphs 139 and 140 of Tsurushima. As recited in independent claims 1, 6 and 7, the weighting table is used by the bit allocation process. In contrast, the "filter coefficients or weighting functions" recited in Tsurushima are used by multipliers in the convolution filter circuit 523. (See Tsurushima at para. [0139]) The weighting functions of Tsurushima are not used for bit allocation, as explicitly recited in independent claims 1, 6 and 7.

Furthermore, Tsurushima fails to teach using a "weighting table" for performing bit allocation. As a matter of fact, the use of tables is nowhere mentioned in Tsurushima. Tsurushima's weighting is not done with respect to bit allocation, as recited in claims 1, 6 and 7. Instead, in Tsurushima, "weighting coefficients" are used in a convolution filter and not in a bit allocation process, as recited in claims 1, 6 and 7. (see Tsurushima at para. 139). For at least this reason, Applicants respectfully submit that Examiner's attempt to equate Tsurushima's

"weighting coefficients" with Applicants' "weighting" is in error. This error was repeated on page 5 of the latest Office Action, in Examiner's response to Applicants' arguments.

Withdrawal of the rejection of independent claims 1, 6 and 7 on the basis of Tsurushima is therefore respectfully requested.

Claims 2-5 are dependent on and include all of the limitations of base claim 1. Claims 8-11 are dependent on and include all of the limitations of claim 7. Therefore, all of the above arguments regarding independent claim 1 and 7 apply equally to dependent claims 2-5 and 8-11.

Claim 12 explicitly requires "performing bit-allocation to allow a sub-band signal having a frequency band that is most humanly perceptible to be allocated with the largest number of bits." Applicants respectfully submit that this feature of the present invention is neither taught nor suggested by Tsurushima.

On page 4 of the Office Action, paragraphs 107 to 115 of Tsurushima are cited as anticipating the above-mentioned limitation in claim 12. Applicants respectfully disagree. In the cited portions, Tsurushima teaches that "a higher bit rate of 147 kbps is used for a channel handling the crucial sound, such as speech. On the other hand, 2kbps at most is allocated for a channel which is not crucial." (Tsurushima para. [0113]).

As clearly disclosed in paragraph [0113], Tsurushima's bit apportionment schemes are directed to **channel** bit allocation, not "a sub-band signal having a frequency band that is most humanly perceptible," as distinctly recited in claim 12. Channel bit allocation is different from a sub-band signal, because a channel may contain all frequency bands, or may not contain "a frequency band that is most humanly perceptible," as required by independent claim 12.

Also, Tsurushima uses bit masking to correct (or compensate for) the noise level of filtering. Tsurushima defines masking as the phenomenon wherein, due to the psychoacoustic characteristics of the human ear, certain signals become inaudible because they are masked by other signal(s). (Tsurushima para. [0139]). As a result, as shown in Fig. 16, because the human ear is more sensitive in the middle range of the audio frequency range (B5 through B10 in Fig.

16), the masking phenomenon is more prevalent in that range. Therefore, as disclosed in paragraph [0139] of Tsurushima, "any noise present in a masked portion becomes inaudible." In effect, Tsurushima ignores audio information in the most humanly audible frequency range because that audio information falls in a *masked portion*. Such a method is different, if not completely opposite to "performing bit-allocation to allow a sub-band signal having a frequency band that is most humanly perceptible to be allocated with the largest number of bits," as recited in claim 12.

Furthermore, as opposed to Applicants' claimed invention, Tsurushima teaches that, when restricting the high-efficiency coding data of two or more channels in a certain bit rate, the amount of bit allocation for every channel is determined by taking other channels into consideration. (Tsurushima paras. [24; 47; and 107-110]). In contrast to what is taught by Tsurushima, in Applicants' claimed invention, there is no necessity for the correlation with other channels to be taken into consideration. A claimed embodiment of the present invention aims at conducting low-operation quantification of the psychoacoustic analysis during the high-efficiency coding process of the audio signal.

For any of the above-mentioned reasons, withdrawal of the rejection of claim 12 is respectfully requested.

In view of the above remarks, applicant believes the pending application is in condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

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Respectfully submitted,

By _____

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